

Appl. No. 10/716,685
Atty. Docket No.: 2003B111
Amendment dated April 13, 2007
Reply to Office Action of December 14, 2006

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REMARKS/ARGUMENTS

Claim Status – Request for Reconsideration

Reconsideration of this application is requested. The claims presented for reconsideration are claims 26-28, 30-49, 71-75, and 77-93. Independent claims 26 and 71 have been amended to incorporate the subject matter of claims 94 and 96, respectively. Accordingly, no new matter is entered by way of this Amendment and Response.

Applicants appreciate the courtesies extended to Applicants' representative by the Examiner during an in-person interview at the U.S. Patent & Trademark Office on April 9, 2007. The remarks and amendments herein are believed to be in accordance with the substance of the discussions during the in-person interview.

Claim Rejections – 35 U.S.C § 103

Claims 26-49 and 71-93 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 6,441,262 to Fung *et al.* (hereinafter "Fung"), in view of U.S. Patent No. 4,822,825 to Bhattacharya *et al.* (hereinafter "Bhattacharya"), further in view of U. S. Patent No. 4,751,248 to Lin *et al.* (hereinafter "Lin"), still further in view of U. S. Patent No. 4,752,263 to Stevens *et al.* (hereinafter "Stevens"), and yet further in view of U. S. Patent No. 6,114,279 to Fukui *et al.* (hereinafter "Fukui"). This rejection is traversed and reconsideration requested. Applicants respectfully submit that the claims, as presently amended, are allowable over the cited prior art.

The claimed invention is particularly directed to processes for producing light olefins. According to the claimed process, a first syngas stream can be contacted with a methanol synthesis catalyst to form a methanol-containing stream. In addition, a second syngas stream can be contacted with a fuel alcohol synthesis catalyst to form a fuel alcohol-containing stream. At least a portion of the methanol-containing stream can be combined with at least a portion of the fuel alcohol-containing stream to form a combined stream having a methanol to C₂-C₄ alcohol weight ratio of from about 0.1 to about 4.0 and having a butanol content of less than 3 weight percent. The combined stream can then be contacted with a molecular sieve catalyst composition to form an olefin composition. The olefin composition that is formed can be varied in ethylene and propylene content by using the combined stream to produce the desired product.

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Fung discloses a method of making an ethylene, propylene, and butylene product. According to the disclosed method, Fung's product is made by contacting a molecular sieve catalyst with an oxygenate to convert a portion of the oxygenate to a product containing olefin. The catalyst is separated from the olefin product and a portion of the separated catalyst is directed to a regenerator for regeneration. The regenerated catalyst is then contacted with an alcohol selected from methanol, ethanol, 1-propanol, 1-butanol, or mixtures thereof. The relative amounts of ethylene, propylene, and butylene produced by the process is in part dependent upon the composition of the alcohol used to contact the regenerated catalyst.

Fung differs from the claims, as presently amended, in that Fung does not disclose or suggest a combined stream having a methanol to C₂-C₄ alcohol weight ratio of from about 0.1 to about 4.0 and a butanol content of less than 3 weight percent. Fung discusses in column 3, line 29 through column 4, line 35, preferred embodiments where it is desired to optimize the production of one olefin over the others. In each of these embodiments, however, Fung teaches binary compositions of methanol plus the alcohol with the same carbon number as the desired olefin to optimize.

In only one place does Fung teach (column 4, line 20) an embodiment where all four components of the alcohol feed (methanol, ethanol, 1-propanol, and 1-butanol) are present, as in the claims of the current application. As a result, this is the only embodiment that is comparable to Applicants' claimed combined feedstream. Fung thus teaches away from the claimed butanol content of less than 3 weight percent by teaching a higher methanol content from about 5 wt% to about 90 wt% (column 4, lines 25 and 26).

The secondary references, Bhattacharya, Lin, Stevens, and Fukui, were cited for disclosing that different catalysts can be used in the manufacture of alcohol compositions, with varying degrees of types of alcohol product produced. However, none of Bhattacharya, Lin, Stevens, or Fukui remedy the deficiencies of Fung in that no cited prior art reference discloses or suggests a combined stream having a methanol to C₂-C₄ alcohol weight ratio of from about 0.1 to about 4.0 and butanol content of less than 3 weight percent. Accordingly, even the combination of all the cited prior art references fails to disclose or suggest the invention, as presently claimed.

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CONCLUSIONS

Having demonstrated that the cited references fail to disclose or suggest the invention as claimed, this application is in condition for allowance. Accordingly, Applicants request early and favorable reconsideration in the form of a Notice of Allowance.


If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Applicants believe that a one (1) month extension of time from March 14, 2007 to April 14, 2007 is necessary for timely submission of this paper. Please charge any appropriate deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2003B111).

Respectfully submitted,

Date: _____

4/13/07


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